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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DOLLINGER, MICHAEL M

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,963	Applicant(s) BENTHEM, VAN ET AL.	
	Examiner MIKE DOLLINGER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/14/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities: the status indicator of claim 8 labels the claim is "withdrawn and currently amended". This claim was part of the elected group I of claims 1-8. The claim will be examined. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ford et al (WO 94/06839 hereinafter referred to as '839) in view of Tinkelenberg et al (EP 0 107 260 A1).

3. '839 discloses urea-aldehyde (aminoplast) binder precursors with an aldehyde/urea ratio preferably ranging from about 1.0 to 2.0 [abstract] and comprising a cocatalyst consisting essentially of a Lewis acid and a salt selected from the group consisting of ammonium ion salts and organic amine salts [abstract]. When the organic amine salts are used, there will necessarily be less than 6wt% of an ammonium salt in the catalyst. Urea-formaldehyde is the preferred urea-aldehyde [page 10 lines 22-24]. The acidic catalyst is chosen from a group including formic acid [page 21 line 34] which

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has a pK_a of 3.74. The pH of the binder precursor should range from about 2 to about 7 [page 21 lines 30-31].

4. The range of pH of the binder precursor in '839 overlaps the corresponding claimed range. In the case where the claimed ranges overlap or lie inside ranges disclosed by the prior a *prima facie* case of obviousness exists *In re Wertheim*, 541 F.2d 257, 1911 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

5. The range of aldehyde/urea ratio in '839 does not overlap the claimed range of $F/(NH_2)_2$ of up to 0.95.

6. Tinkelenberg teaches that it is known that formaldehyde emission can be reduced by using as binder a urea-formaldehyde resin or melamine-urea-formaldehyde resin with a low molar ratio between the formaldehyde and the amino groups (urea) present [page 1 lines 5-8]. Tinkelenberg discloses chipboards comprising a binder of a urea-formaldehyde resin with a molar formaldehyde-to-amino groups ratio between 0.25 and 0.625 and a catalyst comprising a mixture of a latent catalyst and a strong acid [abstract]. This molar formaldehyde-to-amino groups ratio corresponds to a $F/(NH_2)_2$ ratio of 0.5 to 1.25.

7. It would have been obvious to one having ordinary skill in the art at the time the invention was made prepared an adhesive composition comprising a formaldehyde-containing aminoplast resin and a catalysing compound with a $F/(NH_2)_2$ ratio lower than or equal to 0.95 because '839 teaches that it is within the skill of the art to prepare a composition comprising a urea-aldehyde resin and a catalysing compound with a

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F/(NH₂)₂ ratio of about 1.0 to 2.0 and Tinkelenberg teaches that it is within the skill of the art to prepare a urea-aldehyde composition with a F/(NH₂)₂ ratio of 0.5 to 1.25. One would have been motivated to lower the F/(NH₂)₂ ratio of '839 to the ratio taught by Tinkelenberg because Tinkelenberg teaches that lowering this ratio will lower formaldehyde emission, which is safer and is a benefit for the environment. Absent any evidence to the contrary, there would have been a reasonable expectation of success in using a lower F/(NH₂)₂ ratio in the composition of Ford '839.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ford et al (WO 94/06839 hereinafter referred to as '839) in view of Tinkelenberg et al (EP 0 107 260 A1) and further in view of Wagner (US 4,282,135).

9. '839 does not disclose acetic acid as a catalyzing compound in the binder precursor.

10. Wagner discloses that aminoplast formation may be activated by known condensation catalysts including formic acid and acetic acid [10:4-10]. Wagner teaches, henceforth, that formic acid and acetic acid are functional equivalents for the purpose of catalyzing aminoplast formation. It is *prima facie* obvious to substitute art-recognized functional equivalents known for the same purpose. See MPEP § 2144.06.

11. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used acetic acid as the catalyst in an aminoplast binder precursor is low ammonium salt content and low F/(NH₂)₂ because '839 teaches that it is within the skill of the art to prepare an aminoplast binder precursor with a formic acid

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catalyst and Wagner teaches that it is within the skill of the art to form an aminoplast with an acetic acid catalyst. One would have been motivated to do this because Wagner teaches that formic acid and acetic acid are functional equivalents for forming aminoplasts. Absent any evidence to the contrary, there would have been a reasonable expectation of success in using acetic acid as the catalyst in the binder precursor of '839.

12. Claims 1-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ford et al (US 5,486,219 hereinafter referred to as '219) in view of Tinkelenberg et al (EP 0 107 260 A1).

13. '219 discloses urea-aldehyde (aminoplast) binder precursors with an aldehyde/urea ratio preferably ranging from about 1.0 to 2.0 [abstract] and comprising a cocatalyst consisting essentially of a Lewis acid and a salt selected from the group consisting of ammonium ion salts and organic amine salts [abstract]. When the organic amine salts are used, there will necessarily be less than 6wt% of an ammonium salt in the catalyst. Urea-formaldehyde is the preferred urea-aldehyde [7:32-33]. The acidic catalyst is chosen from a group including formic acid [13:63] which has a pK_a of 3.74. The pH of the binder precursor should range from about 2 to about 7 [13:59-61].

14. The range of pH of the binder precursor in '219 overlaps the corresponding claimed range. In the case where the claimed ranges overlap or lie inside ranges disclosed by the prior a *prima facie* case of obviousness exists *In re Wertheim*, 541 F.2d

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257, 1911 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

15. The range of aldehyde/urea ratio in '219 does not overlap the claimed range of $F/(NH_2)_2$ of up to 0.95.

16. Tinkelenberg teaches that it is known that formaldehyde emission can be reduced by using as binder a urea-formaldehyde resin or melamine-urea-formaldehyde resin with a low molar ratio between the formaldehyde and the amino groups (urea) present [page 1 lines 5-8]. Tinkelenberg discloses chipboards comprising a binder of a urea-formaldehyde resin with a molar formaldehyde-to-amino groups ratio between 0.25 and 0.625 and a catalyst comprising a mixture of a latent catalyst and a strong acid [abstract]. This molar formaldehyde-to-amino groups ratio corresponds to a $F/(NH_2)_2$ ratio of 0.5 to 1.25.

17. It would have been obvious to one having ordinary skill in the art at the time the invention was made prepared an adhesive composition comprising a formaldehyde-containing aminoplast resin and a catalysing compound with a $F/(NH_2)_2$ ratio lower than or equal to 0.95 because '219 teaches that it is within the skill of the art to prepare a composition comprising a urea-aldehyde resin and a catalysing compound with a $F/(NH_2)_2$ ratio of about 1.0 to 2.0 and Tinkelenberg teaches that it is within the skill of the art to prepare a urea-aldehyde composition with a $F/(NH_2)_2$ ratio of 0.5 to 1.25. One would have been motivated to lower the $F/(NH_2)_2$ ratio of '839 to the ratio taught by Tinkelenberg because Tinkelenberg teaches that lowering this ratio will lower formaldehyde emission. Absent any evidence to the contrary, there would have been a

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reasonable expectation of success in using a lower $F/(NH_2)_2$ ratio in the composition of Ford '219.

18. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ford et al (US 5,486,219 hereinafter referred to as '219) in view of Tinkelenberg et al (EP 0 107 260 A1) and further in view of Wagner (US 4,282,135).

19. '219 does not disclose acetic acid as a catalyzing compound in the binder precursor.

20. Wagner discloses that aminoplast formation may be activated by known condensation catalysts including formic acid and acetic acid [10:4-10]. Wagner teaches, henceforth, that formic acid and acetic acid are functional equivalents for the purpose of catalyzing aminoplast formation. It is *prima facie* obvious to substitute art-recognized functional equivalents known for the same purpose. See MPEP § 2144.06.

21. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used acetic acid as the catalyst in an aminoplast binder precursor is low ammonium salt content and low $F/(NH_2)_2$ because '219 teaches that it is within the skill of the art to prepare an aminoplast binder precursor with a formic acid catalyst and Wagner teaches that it is within the skill of the art to form an aminoplast with an acetic acid catalyst. One would have been motivated to do this because Wagner teaches that formic acid and acetic acid are functional equivalents for forming aminoplasts. Absent any evidence to the contrary, there would have been a reasonable

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expectation of success in using acetic acid as the catalyst in the binder precursor of '219.

Response to Arguments

22. Applicant's arguments filed 05/14/2009 with respect to the Ford patents '839 and '219 have been fully considered but they are not persuasive. Applicants argues that one having ordinary skill in the art would not have been led to prepare a composition with $F/(NH_2)_2$ ratio below 1.0 because Applicants examples with a ratio of 0.9 have a lower formaldehyde potential than comparative examples with a ratio of 1.1 and 1.2. This argument is not convincing. Applicants appear to be contending that there are unexpected results from a composition with a ratio below 0.95. However, there are no unexpected results shown. Tinkelenberg, discussed above, teaches that a low $F/(NH_2)_2$ ratio lowers formaldehyde emission (formaldehyde potential).

23. Applicant's arguments with respect to all other rejections have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MIKE DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/mmd/

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796